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(54) **Spout fitment closure plug.**

Ein Mundstück dichtender Verschlussstopfen

Bouchon de fermeture étouppant le bec

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(56) References cited:
DE-A- 2 849 681 **DE-A- 2 923 785**
US-A- 3 966 080 **US-A- 3 998 354**

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Description**BACKGROUND OF THE INVENTION****Field of the Invention**

[0001] This invention relates to a new and improved spout fitment and plug for closing the same. More particularly the invention relates to a fitment which fits around a hole in a panel of a paperboard carton or around a hole in a flexible container, or the like, such as used for packaging liquid products and powders and to a closure for such fitment.

Description of Related Art

[0002] A typical prior art fitment and cap is shown in Fig. 1 of the accompanying drawings and is discussed in the preferred embodiments portion of this specification. Generally speaking, prior fitments have spouts with external threads closed by caps with internal threads. Some fitments are used in conjunction with plastic bag containers, the fitment being integrally welded to the plastic bag. Other prior art fitments are attached to a polymer-coated paperboard container such as a gable-topped half-gallon container. Generally, prior art fitments for paperboard cartons include a thin flange which is welded to the surface of the container. The closure includes a foil seal which seals the mouth of the spout and a liner for the cap which serves a resealing function. Attachment to the polymer-coated paperboard is accomplished by welding the flange of the spout to the polymer coating. Upon initial removal, the tamper-evident foil seal is removed and discarded.

[0003] Fitments of the prior art have a number of deficiencies as compared with the present invention. In the first place, they employ multiple components which increase the cost of the combination very greatly over the simple structure of the present invention. Secondly, assembly is difficult and involves rotary equipment which is difficult to control in practice and is expensive to install. Thirdly, because of the fact that the prior art spouts are externally threaded, the diameter of the opening in the spout is restricted inasmuch as there is only limited space on the panel of the container on which the flange can be located, thereby reducing the diameter of the fitment flange and correspondingly the diameter of the spout. Finally, commercially available fitment-closure combinations have no external tamper-evident features (as contrasted with the internal foil seal of the spout opening).

SUMMARY OF THE INVENTION

[0004] According to a first aspect of the present invention there is provided an apparatus comprising in combination, a fitment and a closure therefor, said fitment comprising a spout having an interior and an exterior

formed with internal first engagement means, and attachment means for attaching said fitment vicinal an aperture in a container, and said closure comprising a top, a skirt having an interior and an exterior, said skirt depending from said top and formed with external second engagement means engageable with said first engagement means, characterised in that said fitment further comprises diametrically opposed ratchets formed in a top edge of said spout and said closure further comprises a tamper-evident band surrounding and spaced outward of said skirt, said band being connected to said skirt by frangible means and having depending pawls at diametrically spaced positions on an underside of said band which engage the ratchets of said spout to restrain rotation of said closure relative to said fitment so long as said frangible means is intact.

[0005] One embodiment of the present invention employs a fitment having a spout which is internally threaded and having a flange or other means which is welded or otherwise adhered to the container panel on which the fitment is installed. The closure is an externally threaded plug closure which seals against a membrane on the fitment, which membrane also protects the exposed edge of the hole formed in the container panel. A tamper-evident band on the closure is joined to the closure by a plurality of frangible bridges or the parts may be initially connected by other frangible means. Assembly of the cap on the fitment is preferably performed by a direct axial pushing movement, the threads slipping past each other during the axial movement. The depending pawls on an underside of the tamper-evident band engage the ratchets of the spout which prevent rotation of the cap so long as the bridges which join the band to the cap are intact. Thus, after axial assembly the threaded plug cannot be removed prior to removal of the tamper evident band.

[0006] As an additional feature, the plug and spout may be molded simultaneously in a single cavity in an injection molding machine. Further, as the parts are ejected from the cavity, the threaded plug may be moved axially so that it fits inside the spout and the threads of the spout and plug inter-engage.

[0007] As those skilled in the art will realize, materials such as polyolefins having relatively high flexibility and toughness will be most suitable in practice of the invention.

DESCRIPTION OF DRAWINGS

[0008] The accompanying drawings, which are incorporated in and form a part of this specification, illustrate embodiments of the invention and, together with the description, serve to explain the principles of the invention:

[0009] Fig. 1 is a fragmentary sectional view of a portion of a prior art fitment and closure assembly.

[0010] Fig. 2 is a side elevational view of a fitment and closure in accordance with the present invention prior to assembly.

[0011] Fig. 3 is an enlarged fragmentary sectional view through an assembled closure and fitment attached to the panel of a container.

[0012] Fig. 4 is a top plan view of a fitment.

[0013] Fig. 5 is a top plan view of a closure.

[0014] Figs. 6, 7, 8 and 9 are fragmentary sectional views taken substantially along the lines 6--6, 7--7, and 8--8 and 9--9, respectively, of Fig. 5.

[0015] Fig. 10 is an enlarged vertical sectional view through the structure of Fig. 2.

[0016] Fig. 11 is a fragmentary sectional view similar to structure to Fig. 10 but angularly rotated to show the integral connection between closure and spout.

[0017] Figs. 12 and 13 are, respectively, modifications of the structure of Figs. 1-11, taken substantially along the same lines as Fig. 11.

DESCRIPTION OF PREFERRED EMBODIMENTS

[0018] Reference will now be made in detail to the preferred embodiments of the invention, examples of which are illustrated in the accompanying drawings. While the invention will be described in conjunction with the preferred embodiments, it will be understood that they are not intended to limit the invention to those embodiments. On the contrary, the invention is intended to cover alternatives, modifications and equivalents, which may be included within the scope of the invention as defined by the appended claims.

[0019] Directing attention now to the typical prior art structure shown in Fig. 1, a carton of paperboard coated with a suitable polymer has a panel 21 formed with a hole 22. Surrounding hole 22 is a fitment 23 having an upstanding spout 24 formed with external threads 26. The lower edge of spout 24 has an external flange 27 which is caused to adhere to the panel 21 by welding, adhesive or other suitable means.

[0020] The prior art cap 31 has a top disk 32 from which depends a skirt 33 having internal threads 34 mating with the threads 26. Initially, the cap 31 may be provided with a liner 36 which functions as a re-closure seal and also with a foil seal 37 which seals against the upper end of the spout 24 and provides tamper-evident features. Once the seal 37 is removed, the liner 36 performs a sealing function on re-closure.

[0021] Some of the advantages of the present invention over prior art structures such as the typical assembly shown in Fig. 1 have heretofore been described.

[0022] A preferred structure of the present invention is shown in Figs. 2-11. Fitment 41 has an upstanding spout 42 formed with a top edge 43 and having internal threads 44. Preferably the threads 44 are multiple lead threads, since (as hereinafter described) this balances the gating of the spout (see below descriptions of Figs. 10 and 11).

[0023] Below threads 44, spout is formed with a downward-inward slanted seal membrane 48 which, as shown in Fig. 3, performs a sealing function with the clo-

sure as hereinafter appears. Diametrically opposed ratchets 46 are formed in the top edge 43 for the purpose of locking with the tamper-evident band of the closure as hereinafter appears. At the bottom of the fitment is an enlarged peripheral flange 47, the underside of which is caused to adhere to the panel 21.

[0024] Closure 51 functions as a plug to close the spout 42. It is formed with a top disk 52 having a rounded corner 53 from which depends a skirt 54. The upper portion of skirt 54 is formed with vertical ribs 56 which extend around the corner 53 and partially inward of the disk 52. Ribs 56 are separated by spaces 57. By gripping the ribs 56 the user may turn the closure 51. Midway of the skirt 54 and immediately below the ribs 56 is an external wall 58 and below the wall 58 are threads 59 which mate with the threads 44.

[0025] Surrounding the skirt 54 is a narrow tamper-evident band 61 which is connected to the lower ends of some of the ribs 56 by horizontal frangible bridges 62. At diametrically spaced positions on the under side of band 61 are depending pawls 63 which engage the ratchets 46 of spout 42 to restrain rotation of closure 51 relative to fitment 41 so long as the bridges 62 are intact. One or more tear tabs 64 (here shown as two in number and depending from band 61 immediately outward of pawls 63) are attached to the band 61. By pulling the tab 64 outward, the band 61 may be disconnected from the closure 51 and the closure may be turned relative to the fitment since the pawls 63 are out of engagement with the ratchets 46. However, the removal of band 61 or any tearing of the bridges 62 gives evidence of tampering with the contents of the container. To facilitate removal, bridges 62 are omitted in the vicinity of tear tabs 63 (See Figs. 3, 5 and 6).

[0026] The consumer may turn closure 51 to open and close the container. In the closed condition, the end 66 of the skirt 54 seals against the seal member 48 of fitment 41.

[0027] One preferred means for the production of the fitment 41 and closure 51 is shown in Figs. 10 and 11 whereby the two parts may be made simultaneously in a single cavity of a plastic injection mold. Thus in the mold, the fitment 41 is positioned below the closure 51. As shown in Fig. 11, there are gates 71 connecting the fitment to the closure. Gates 71 are positioned to coincide with the theoretical projections of the lower ends (or run-outs) of helical threads 59. The plastic is injected at the top of the closure and the molten plastic extends through the gate 71 into the top of the spout 42. Accordingly the two parts may be molded simultaneously. In order to separate the parts, the gate 71 is fractured. Such fracture may be accomplished merely by pushing axially downward on the closure, the threads 59 slipping over the threads 44. It will be understood, however, that the parts may be molded separately. When molded simultaneously, by proper mold construction, the parts may be assembled before being ejected from the mold.

[0028] Fig. 12 illustrates an alternate construction. In

this modification, a continuous frangible web connection 76b connects the plug to the top edge 43b circumferentially around the parts. The parts may be installed on the container in the condition shown in Fig. 12. So long as the connector 76 b is intact, the consumer is assured that there has been no tampering with the container. At the time of consumption, the user fractures the connection 76b either by twisting the closure 51b or other convenient means. The closure 51b may be installed on the fitment 41 b after part of the contents of the container have been dispensed merely by screwing the closure 51b into the spout 42b. Furthermore, in the form of the invention shown in Fig. 12, which is particularly useful where the device is to be attached to a container having solid contents, the lower end of the fitment 41b has a downward extending ring 81 which fits inside the hole 22 and is retained therein by an outward extending barb 82 which engages under the panel 21. To stabilize and also to seal the fitment, an outer seal member 83 similar to the seal member 48b engages the top surface of the panel 21. In Fig. 12 the parts are shown prior to assembly of the plug to fitment spout. It will be understood that normally a closure 51b is attached to the fitment 41b before the ring 81 is inserted in the panel 21.

[0029] Fig. 13 shows still another modification. The structure in Fig. 13 is substantially similar to that in Fig. 12 except that the stabilizing seal member 83 of Fig. 12 is omitted. consumer separates the two parts, the closure may be used for reclosure purposes.

[0030] Thus spout 42e need not be threaded. Closure 51e is joined to the upper edge 43e of spout 42e in a frangible, continuous, circumferential tear band 91 which functions as a connection or gate during molding of the parts and further makes the parts in the condition shown in Fig. 17 tamper-evident. In the preferred form best shown in Fig. 17, circumferential flange 96 extends horizontally out from top disk 52e beyond the confines of skirt 54e. At one or more positions around the circumference of band 91 is a pull tab 92, of limited width, which may extend up above the level of closure top disk 52e and out beyond the edge of flange 96 so that it is conveniently gripped by the consumer. Below the level of flange 96, tab 92 slants downward-inward to join tear band 91. At least one point, tab 92 is connected to the edge of flange 96 by one or more frangible bridges 94 which helps stabilize the tab and also makes additional contribution to tamper-evidency.

[0031] The flange 47e may be adhered around a hole in a container with the combination shown in Fig. 17 intact and tamper-evident since as long as bridge 94 and tear band 91 are intact the user cannot obtain access to the contents of the container. To open the container, the consumer grasps tab 92, breaking bridge 94 and then tear band 91. Closure 51e is then removed by gripping flange 96.

[0032] For reclosure skirt 54e is inserted in spout 42e and top 52e pushed downward. Collar 58e seals against the inside of spout 42e and seal member 48e seals

against the outside of skirt 66e, both sealing with a friction fit. Flange 96 seats on top edge 43e, limiting downward movement of the closure. The closure 51e may be removed by gripping flange 96 and replaced repeatedly.

[0033] In the modification of Figs. 19-20, fitment 41f is applied to a container 101 of any convenient type such as one having an external locking bead 102 below top edge 103. Fitment 41f has an annular top 106 having upward extending spout 42f. The underside of top 106 has an inner skirt or hollow plug 107 which fits inside the wall of container 101. Outward of plug 107 is a groove 108 which receives edge 103 and beyond groove 108 is a shoulder 109 which fits against the upper outer edge of container wall 101. A peripheral short skirt 111 has an internal bead 112 which locks under bead 102.

[0034] The closure 51f is quite similar to that of Figs. 16-18 except that skirt 54f may be dimensioned to fit tightly within spout 42f without use of a collar such as collar 58e of Fig. 17. The lower edge of skirt 54f is bevelled and is initially connected by frangible connector 76f to the inner edge of the upper end of spout 42f.

[0035] The closure as shown in Fig. 19 is tamper-evident. The consumer grasps closure 51f, breaking connector 76f. For reclosure purposes, closure skirt 54f is inserted in spout 42f and pushed down to assume the closed position shown in Fig. 20.

[0036] In many respects the modifications of Figs. 12, 13, 14, 15, 17 and 19 resemble those of the preceding modifications, and the same reference numerals followed by the subscripts a, b, c, d, e and f, respectively, are used to designate corresponding parts.

Claims

1. An apparatus comprising in combination, a fitment (41) and a closure (51) therefor, said fitment (41) comprising a spout (42) having an interior and an exterior formed with internal first engagement means (44), and attachment means (47) for attaching said fitment vicinal an aperture in a container, and said closure (51) comprising a top (52), a skirt (54) having an interior and an exterior, said skirt (54) depending from said top (52) and formed with external second engagement means (59) engageable with said first engagement means (44), characterised in that said fitment (41) further comprises diametrically opposed ratchets (46) formed in a top edge (43) of said spout (42) and said closure (51) further comprises a tamper-evident band (61) surrounding and spaced outward of said skirt (54), said band (61) being connected to said skirt (54) by frangible means (62) and having depending pawls (63) at diametrically spaced positions on an underside of said band (61) which engage the ratchets (46) of said spout (42) to restrain rotation of said closure (51) relative to said fitment (41) so long as said frangible means (62) is intact.

2. The apparatus of claim 1 in which said second engagement means comprises a collar (58) on the exterior of said skirt (54) which engages the interior of said spout (42).
3. The apparatus of claim 1 or claim 2 in which said skirt (54) is formed with external gripping ribs (56), the lower ends of at least some of said ribs (56) being joined to said band (61) by bridges (62), said bridges (62) comprising said frangible means.
4. The apparatus of any preceding claim, in which said frangible means (62) comprise angularly spaced bridges.
5. The apparatus of any preceding claim, in which said first and second engagement means (44,59) comprise complimentary threads.
6. The apparatus of any preceding claim, in which said attachment means (47) comprises a ring (81) fitting through said aperture and a barb (82) on said ring (81).
7. The apparatus of claim 6 which further comprises a sealing member (48b) extending from said ring (81) inside said spout (42).
8. The apparatus of claim 7 which further comprises a second sealing member (83) extending outward of said ring (81) to engage the exterior of said container.
9. The apparatus of any preceding claim which further comprises a sealing member (48) extending inward from the interior of said spout (42) to engage said skirt (54).
10. An intermediate apparatus comprising in combination, a fitment (41) and a closure (51) therefor, said fitment (41) comprising a spout (42) having an interior and an exterior formed with internal first engagement means (44), and attachment means (47) for attaching said fitment vicinal an aperture in a container, and said closure (51) comprising a top (52), a skirt (54) having an interior and an exterior, said skirt (54) depending from said top (52) and formed with external second engagement means (59) engageable with said first engagement means (44) and breakable means (71) interconnecting a portion of said fitment (41) and said skirt (54), said breakable means (71) being positioned so that said closure (51) cannot be moved relative to said fitment (41) without breaking said breakable means (71), characterised in that said combination further comprises, in addition to said breakable means (71), first tamper-evident means on said fitment (41) and second tamper-evident means (61) on said clo-

sure (51) co-operable with said first tamper-evident means to restrain removal of said skirt (54) from said spout (42) after said first and second engagement means (44,59) are brought into engagement, at least one of said tamper-evident means being frangible.

11. The apparatus of claim 10 in which said closure (51) comprises a plug portion, and said first and second engagement means (44,59) are angularly positioned such that they can be brought into complementary registration with a unidirectional axial force sufficient to insert the plug portion into the spout (42), said plug portion and spout (42) being integrally joined together through a line of weakness (76) so that said plug and spout (42) may be formed simultaneously in a single shot injection molding cycle.
12. The apparatus of claim 11 in which said line of weakness (76) is adjacent to and extends the circumference of said spout (42).
13. The apparatus of claim 11 in which said line of weakness (76) is adjacent to and extends the circumference of said closure (51).
14. The apparatus of any of claims 11 to 13 in which said line of weakness is formed by a plurality of discrete bridges (71) angularly spaced around the circumference of said fitment (41).

Patentansprüche

1. Vorrichtung mit einer Kombination aus einem aufzumontierenden Teil (41) und einem Verschluss (51) dafür, wobei das aufzumontierende Teil (51) ein eine Innenseite und Außenseite aufweisendes Ausgußrohr, das mit einer inneren ersten Eingriffseinrichtung (44) versehen ist, und eine Befestigungseinrichtung (47) zum Befestigen des aufzumontierenden Teils angrenzend an eine Öffnung in einem Behälter hat, und wobei der Verschluss (51) ein Oberteil (52) und einen Mantel (54) mit einer Innenseite und einer Außenseite hat, der an dem Oberteil (52) hängt und mit einer äußeren zweiten Eingriffseinrichtung (59) versehen ist, die mit der ersten Eingriffseinrichtung (44) in Eingriff bringbar ist, dadurch gekennzeichnet, daß der aufzumontierende Teil (41) weiterhin diametral gegenüberliegende Sperrklinken (46) aufweist, die an einem oberen Rand (43) des Ausgußrohrs (42) ausgebildet sind, und daß der Verschluss (51) weiterhin ein einen Missbrauch kenntlich machendes Band (61) aufweist, das den Mantel (54) außen in einem Abstand umgibt, mit dem Mantel (54) durch eine zerbrechbare Einrichtung (62) verbunden ist und an diame-

tral beabstandeten Positionen an der Unterseite des Bandes (61) herabhängende Klauen (63) hat, die an den Sperrklinken (46) des Ausgußrohres (42) angreifen, um eine Drehung des Verschlusses (51) bezüglich des aufzumontierenden Teils (41) so lange zu unterbinden, wie die zerbrechbare Einrichtung (62) unversehrt ist.

2. Vorrichtung nach Anspruch 1, bei welcher die zweite Eingriffseinrichtung einen Bund (58) an der Außenseite des Mantels (54) aufweist, der an der Innenseite des Ausgußrohres (42) angreift. 10
3. Vorrichtung nach Anspruch 1 oder Anspruch 2, bei welcher der Mantel (54) mit äußeren Greifrippen (56) versehen ist, wobei die unteren Enden von wenigstens einigen der Rippen (56) mit dem Band (61) durch Brücken (62) verbunden sind, welche die zerbrechbare Einrichtung aufweisen. 15
4. Vorrichtung nach einem vorhergehenden Anspruch, bei welcher die zerbrechbare Einrichtung (62) in einem Winkelabstand vorgesehene Brücken aufweist. 20
5. Vorrichtung nach einem vorhergehenden Anspruch, bei welcher die erste Eingriffseinrichtung (44) und die zweite Eingriffsvorrichtung (59) komplementäre Gewindgänge aufweisen. 25
6. Vorrichtung nach einem vorhergehenden Anspruch, bei welcher die Befestigungseinrichtung (57) einen Ring (81), der durch die Öffnung paßt, und einen Widerhaken (82) an dem Ring (81) aufweist. 30
7. Vorrichtung nach Anspruch 6, welche weiterhin ein Dichtungselement (48b) aufweist, das sich von dem Ring (81) ins Innere des Ausgußrohres (42) erstreckt. 35
8. Vorrichtung nach Anspruch 7, welche weiterhin ein zweites Dichtungselement (83) aufweist, das sich außerhalb des Rings (81) für den Eingriff mit der Außenseite des Behälters erstreckt. 40
9. Vorrichtung nach einem vorhergehenden Anspruch, welche weiterhin ein Dichtungselement (48) aufweist, das sich von der Innenseite des Ausgußrohres (42) aus für den Eingriff mit dem Mantel (54) nach innen erstreckt. 45
10. Ein Zwischenprodukt bildende Vorrichtung mit einer Kombination aus einem aufzumontierenden Teil (41) und einem Verschuß (51) dafür, wobei das aufzumontierende Teil (51) ein eine Innenseite und eine Außenseite aufweisendes Ausgußrohr (42), das mit einer inneren ersten Eingriffseinrichtung (44)

versehen ist, und eine Befestigungseinrichtung (47) zum Befestigen des aufzumontierenden Teils angrenzend an eine Öffnung in einem Behälter hat, und wobei der Verschuß (51) ein Oberteil (52), einen Mantel (54) mit einer Innenseite und einer Außenseite der an dem Oberteil (52) hängt und mit einer äußeren zweiten Eingriffseinrichtung (59) versehen ist, die mit der ersten Eingriffseinrichtung (44) in Eingriff bringbar ist, sowie eine zerbrechbare Einrichtung (71) hat, die einen Abschnitt des aufzumontierenden Teils (41) und den Mantel (54) verbindet und so positionierbar ist, daß der Verschuß (51) bezüglich des aufzumontierenden Teils (41) ohne Zerschneiden der zerbrechbaren Einrichtung (71) nicht bewegt werden kann, dadurch gekennzeichnet, daß die Kombination zusätzlich zu der zerbrechbaren Einrichtung (71) weiterhin eine erste einen Mißbrauch kenntlich machende Einrichtung an dem aufzumontierenden Teil (41) und eine zweite, einen Mißbrauch kenntlich machende Einrichtung (61) an dem Verschuß (51) aufweist, die mit der ersten einen Mißbrauch kenntlich machenden Einrichtung so zusammenwirkt, daß ein Entfernen des Mantels (54) aus dem Ausgußrohr (42) verhindert wird, nachdem die erste Eingriffseinrichtung (44) und die zweite Eingriffseinrichtung (59) in Eingriff gebracht sind, wobei wenigstens eine der den Mißbrauch kenntlich machenden Einrichtungen zerbrechbar ist.

11. Vorrichtung nach Anspruch 10, bei welcher der Verschuß (51) einen Stopfenabschnitt aufweist und die erste Eingriffseinrichtung (44) und die zweite Eingriffseinrichtung (59) im Winkel so positioniert sind, daß sie in eine komplementäre Deckung mit einer in einer Richtung wirkenden axialen Kraft gebracht werden können, die ausreicht, um den Stopfenabschnitt in das Ausgußrohr (42) einzuführen, wobei der Stopfenabschnitt und das Ausgußrohr (42) zu einem Stück miteinander über eine Schwächungslinie (76) so verbunden sind, daß der Stopfen und das Ausgußrohr (42) gleichzeitig in einem Spritzgießvorgang mit einer einzigen Einspritzung ausgebildet werden können. 50

12. Vorrichtung nach Anspruch 11, bei welcher die Schwächungslinie (76) an den Umfang des Ausgußrohrs (42) angrenzt und sich an ihm entlang erstreckt. 55

13. Vorrichtung nach Anspruch 11, bei welcher die Schwächungslinie an den Umfang des Verschlusses (51) angrenzt und sich an ihm entlang erstreckt.

14. Vorrichtung nach einem der Ansprüche 11 bis 13, bei welcher die Schwächungslinie von einer Vielzahl von gesonderten Brücken (71) gebildet wird, die im Winkelabstand um den Umfang des aufzu-

montierenden Teils (41) herum angeordnet sind.

Revendications

1. Appareil comportant en combinaison, une monture (41) et un organe de fermeture (51) pour celle-ci, ladite monture (41) comportant un bec (42) ayant un côté intérieur et un côté extérieur formés avec des premiers moyens intérieurs (44) d'engagement, et des moyens de fixation (47) pour fixer ladite monture au voisinage d'une ouverture dans un récipient, et ledit organe de fermeture (51) comportant un dessus (52), une jupe (54) ayant un côté intérieur et un côté extérieur, ladite jupe (54) s'étendant vers le bas depuis ledit dessus (52) et étant formée avec des seconds moyens extérieurs (59) d'engagement pouvant être engagés avec lesdits premiers moyens d'engagement (44), caractérisé en ce que ladite monture (41) comporte en outre des éléments d'encliquetage (46) diamétralement opposés formés dans un bord supérieur (43) dudit bec (42) et ledit organe de fermeture (51) comporte en outre une bague (61) de mise en évidence de spoliation entourant ladite jupe (54) de laquelle elle est espacée vers l'extérieur, ladite bague (61) étant reliée à ladite jupe (54) par des moyens (62) pouvant être rompus et ayant des griffes descendantes (63) dans des positions diamétralement espacées sur un côté inférieur de ladite bague (61), qui engagent les éléments d'encliquetage (46) dudit bec (42) pour empêcher une rotation dudit organe de fermeture (51) par rapport à ladite monture (41) tant que lesdits moyens (62) pouvant être rompus sont intacts.
2. Appareil selon la revendication 1, dans lequel lesdits seconds moyens d'engagement comprennent un anneau (58) situé sur le côté extérieur de ladite jupe (54) qui engage le côté intérieur dudit bec (42).
3. Appareil selon la revendication 1 ou la revendication 2, dans lequel ladite jupe (54) est formée avec des nervures extérieures (56) de prise, les extrémités inférieures d'au moins certaines desdites nervures (56) étant reliées à ladite bague (61) par des ponts (62), lesdits ponts (62) comprenant lesdits moyens pouvant être rompus.
4. Appareil selon l'une quelconque des revendications précédentes, dans lequel lesdits moyens (62) pouvant être rompus comprennent des ponts espacés angulairement.
5. Appareil selon l'une quelconque des revendications précédentes, dans lequel lesdits premiers et seconds moyens d'engagement (44, 59) comprennent des filets complémentaires.
6. Appareil selon l'une quelconque des revendications précédentes, dans lequel lesdits moyens de fixation (47) comprennent un anneau (81) s'ajustant à travers ladite ouverture et une arête (82) située sur ledit anneau (81).
7. Appareil selon la revendication 6, qui comporte en outre un élément d'étanchéité (48b) s'étendant depuis ledit anneau (81) vers l'intérieur dudit bec (42).
8. Appareil selon la revendication 7, qui comporte en outre un second élément d'étanchéité (83) s'étendant vers l'extérieur dudit anneau (81) pour engager le côté extérieur dudit récipient.
9. Appareil selon l'une quelconque des revendications précédentes, qui comporte en outre un élément d'étanchéité (48) s'étendant vers l'intérieur depuis le côté intérieur dudit bec (42) pour engager ladite jupe (54).
10. Appareil intermédiaire comportant en combinaison une monture (41) et un organe de fermeture (51) pour celle-ci, ladite monture (41) comportant un bec (42) ayant un côté intérieur et un côté extérieur formés avec des premiers moyens intérieurs d'engagement (44), et des moyens de fixation (47) pour fixer ladite monture au voisinage d'une ouverture dans un récipient, et ledit organe de fermeture (51) comportant un dessus (52), une jupe (54) ayant un côté intérieur et un côté extérieur, ladite jupe (54) s'étendant vers le bas depuis ledit dessus (52) et étant formée avec des seconds moyens extérieurs d'engagement (59) pouvant être engagés avec lesdits premiers moyens d'engagement (44) et des moyens (71) pouvant être rompus reliant entre elles une partie de ladite monture (41) et ladite jupe (54), lesdits moyens (71) pouvant être rompus étant positionnés de façon que ledit organe de fermeture (51) ne puisse pas être déplacé par rapport à ladite monture (41) sans rompre lesdits moyens (71) pouvant être rompus, caractérisé en ce que ladite combinaison comporte en outre, en plus desdits moyens (71) pouvant être rompus, des premiers moyens de mise en évidence d'une spoliation sur ladite monture (41) et des seconds moyens (61) de mise en évidence d'une spoliation sur ledit organe de fermeture (51), pouvant coopérer avec lesdits premiers moyens de mise en évidence d'une spoliation pour empêcher l'enlèvement de ladite jupe (54) dudit bec (42) après que lesdits premiers et seconds moyens d'engagement (44, 59) ont été amenés en engagement, au moins l'un desdits moyens de mise en évidence d'une spoliation pouvant être rompu.
11. Appareil selon la revendication 10, dans lequel ledit organe de fermeture (51) comporte une partie d'ob-

turation, et lesdits premiers et seconds moyens d'engagement (44, 59) sont positionnés angulairement de manière à pouvoir être amenés en alignement complémentaire avec une force axiale unidirectionnelle suffisante pour introduire la partie d'obturation dans le bec (42), ladite partie d'obturation et ledit bec (42) étant reliés de façon intégrée entre eux par une ligne d'affaiblissement (76) afin que ledit obturateur et ledit bec (42) puissent être formés simultanément en un cycle de moulage par injection en un seul temps.

12. Appareil selon la revendication 11, dans lequel ladite ligne d'affaiblissement (76) est adjacente à la circonférence dudit bec (42) le long de laquelle elle s'étend.
13. Appareil selon la revendication 11, dans lequel ladite ligne d'affaiblissement (76) est adjacente à la circonférence dudit organe de fermeture (51) le long de laquelle elle s'étend.
14. Appareil selon l'une quelconque des revendications 11 à 13, dans lequel ladite ligne d'affaiblissement est formée de plusieurs ponts discrets (71) espacés angulairement le long de la circonférence de ladite monture (41).

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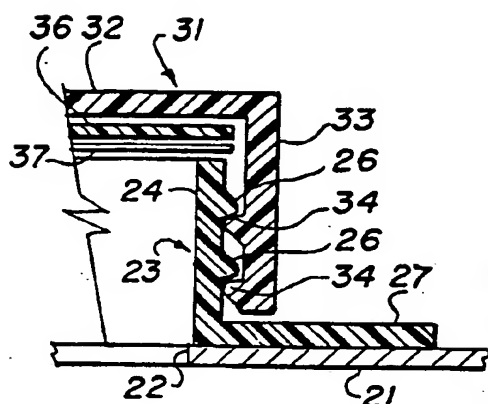


Fig. 1
PRIOR ART

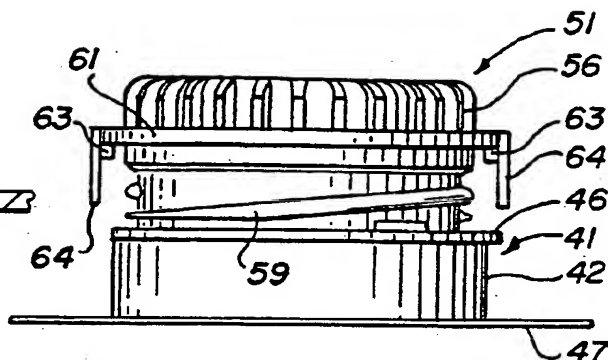


Fig. 2

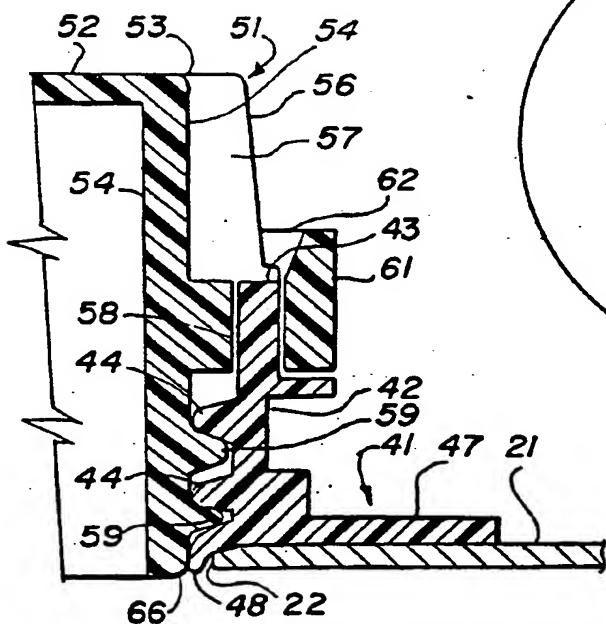


Fig. 3

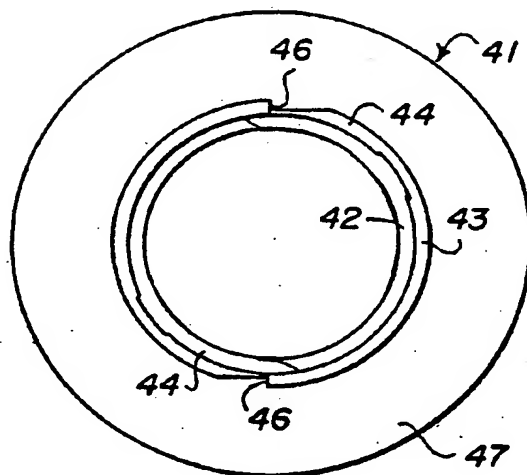


Fig. 4

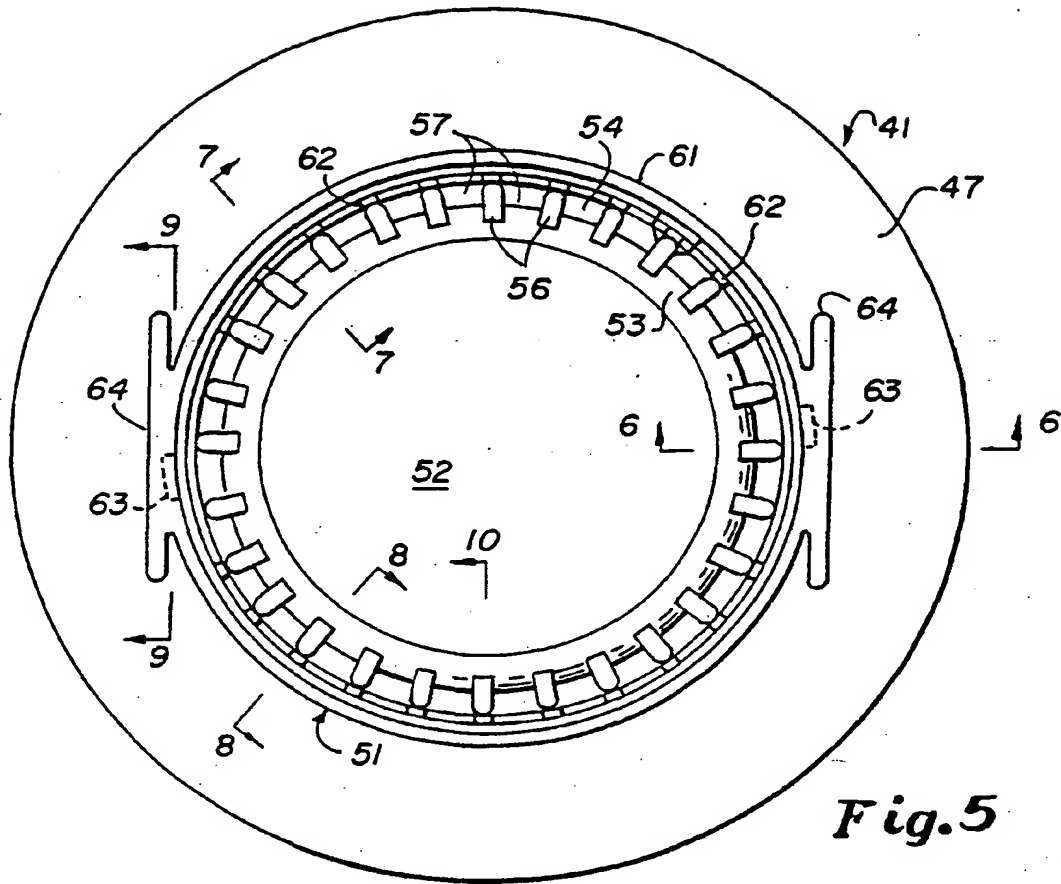


Fig. 5

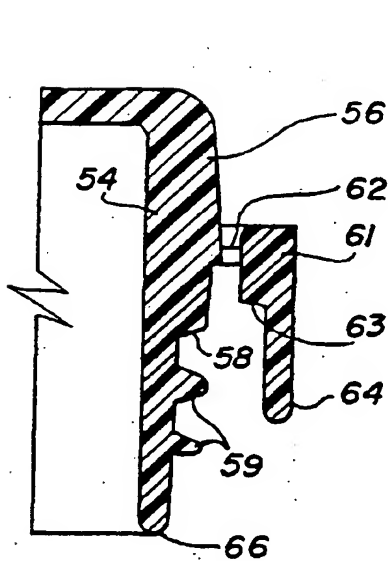


Fig. 6

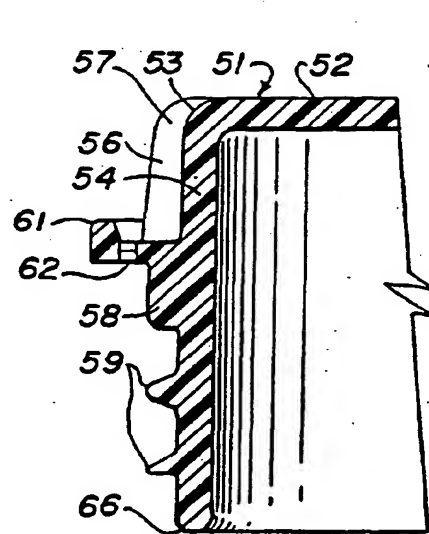


Fig. 7

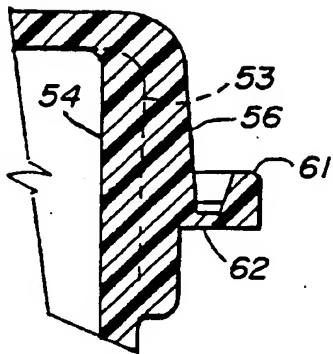


Fig. 8

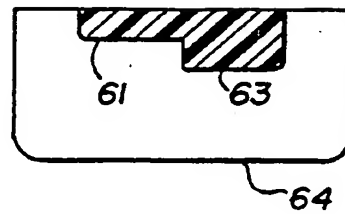


Fig. 9

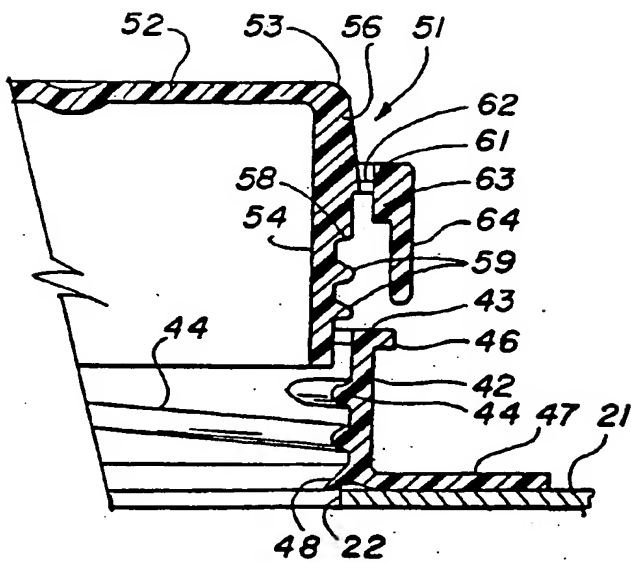


Fig. 10

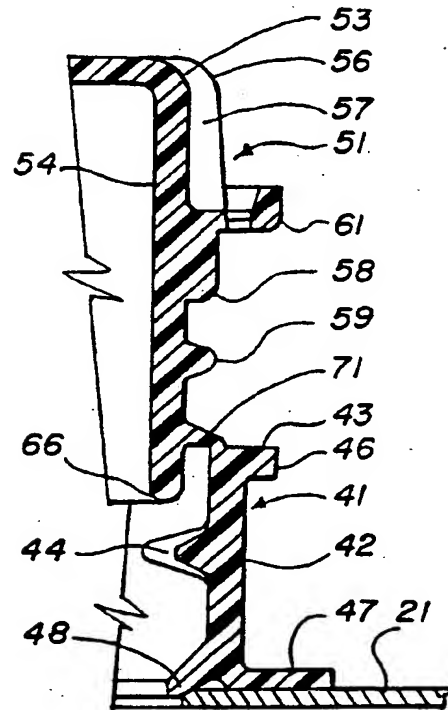


Fig. 11

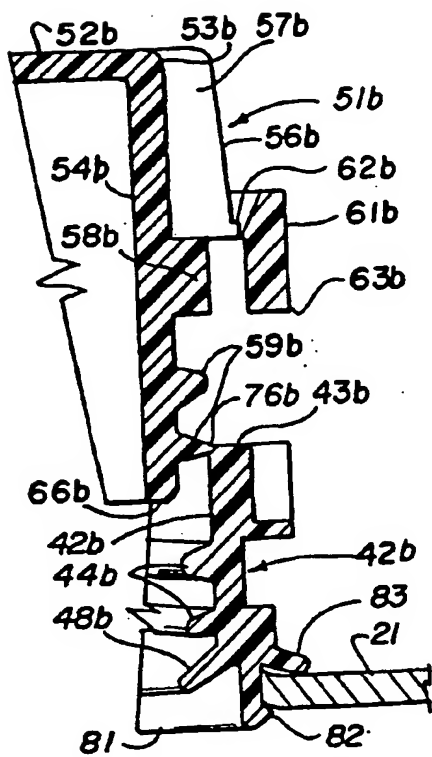


Fig. 12

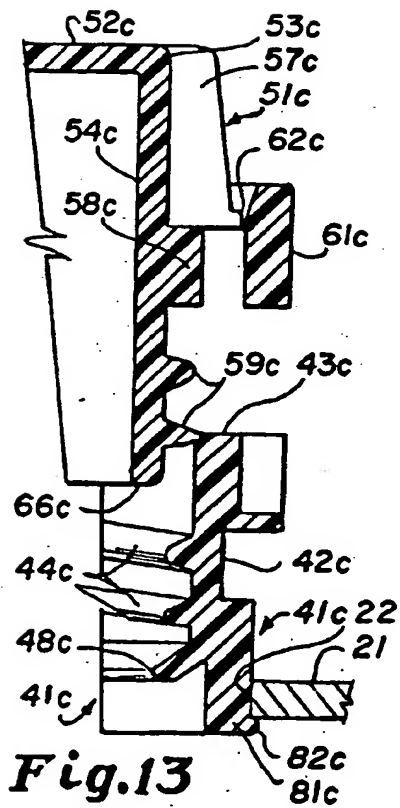


Fig. 13